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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,136	07/07/2000	Tohru Nagano	JA999-118X	8446

33360 7590 07/12/2006

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EXAMINER

HAN, QI

ART UNIT PAPER NUMBER

2626

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/612,136	NAGANO ET AL.	
	Examiner	Art Unit	
	Qi Han	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-26,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-26,29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Response to Amendment

3. This communication is responsive to the applicant's amendment and RCE examination both filed on 04/27/2006. The Applicant(s) amended claims 7, 9-11, 13-18, 21 and 26, cancelled claims 27-28, and added new claims 29-30 (see the amendment: pages 2-7).

Response to Arguments

4. Applicant's arguments with respect to claim rejection under 35 USC 102 and/or 103 have been fully considered but are moot in view of the new ground(s) of rejection. The response to the applicant's arguments is directed to the corresponding claim rejection (see below).

Specification

5. The disclosure is objected to because of the following:
- a. on page 17, lines 2-7, the content of “the form of the...is (...)” is not a complete sentence. An appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 7-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 7, the amended limitation “a threshold of the set of related mutually dependent relationships” introduces new subject matter, because the limitation is not specifically described in the original specification (see the closet disclosure on page 3, paragraphs 3-4).

Regarding claims 8-20, the rejection is based on the same reason described for claim 7, because these dependent claims inherit the same limitation(s) as claim 7.

Further, regarding claim 15, the recited limitation “identifying the groups in which the related mutually dependent relationships exceed a threshold is achieved automatically through utilization of computer generated or user defined rules in which the threshold is defined for each

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category”, also introduces new subject matter, which lacks sufficient specificity in the original specification (see the closet disclosure on page 3, paragraphs 3-4).

Further, regarding claims 16-18, the recited limitation “~~the~~ threshold (referring to the rejected subject matter in claim 7, see above) ...”, also introduces new subject matter, which lacks sufficient specificity in the original specification.

Regarding claim 21, the amended limitation “mutually dependent relationships which occur at a frequency greater than a threshold with respect to the set of mutually dependent relationships” introduces new subject matter, because the limitation is not specifically described by the original specification (see the closet disclosure on page 3, paragraphs 3-4).

Regarding claims 22-26, the rejection is based on the same reason described for claim 21, because these dependent claims inherit the same limitation(s) as claim 21.

7. It is reminded that, since the issue of new subject matter happened several times during the amending/examining process, the applicant is required to provide detailed references in the original specification (such as page and line numbers) for supporting his new added/amended limitation(s) in future claim amendment.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 21 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps or cooperative relationships of steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted step/relationship is a step (or sub-step)

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between “identifying the group” and “whereby a search query is not required”. It is noted that the claimed limitation lacks providing a cooperative relationships between them and it is unclear why it needs or not need a search during identifying step, so that the claim is incomplete for omitting a link between limitations “identifying the group” and “whereby a search query is not required”.

Claim Rejections - 35 USC § 103

9. Claims 7-6 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaithyanathan et al. (US 5,857,179) hereinafter referenced as Vaithyanathan, in view of Liddy et al. (6,006,221) hereinafter referenced as Liddy.

As per **claim 7**, as best understood in view of rejection under 35 USC 112 1st (see above), Vaithyanathan discloses computer method and apparatus for clustering documents and automatic generation of cluster keywords (title), including ‘information retrieval, data mining and information filtering’ (col. 2, lines 20-26), comprising:

“receiving a collection of data, the collection of data comprising key word” (Figs. 2, 5 and 6a, show the collected of document (received a collection); col. 10, lines 43-59, ‘the cluster summary data (also interpreted as received collection)’; col. 2, lines 40-42, ‘identified terms represent key-words of each of document’);

“converting the received data into labeled data”; (Fig. 5 and col. 10, lines 43-59, ‘the cluster summary data may be presented ...to allow the user to select (corresponding to convert) the format (corresponding labeled data) of the returned data, or to select a particular number of keywords or documents in each cluster summary (also corresponding to labeled data)’); col. 5,

lines 20-35, 'standardized set of format rules', wherein the standardizing processing can also be interpreted as converting);

"combining the converted received data into clauses of related data" (col. 5, lines 20-55, wherein the text after the 'pre-processing' is interpreted as combined "converted received data"; col. 10, lines 60-67 and figure 6a, 'sentences 1-19 are analogous to document (the converted document combined with standardized text format) into clauses or in a database', wherein the term "clauses" is broadly interpreted as phrases, clauses or sentences, since the applicant does not follow the conventional meaning of a clause in the specification (see page 15) and does not specifically provide his own definition either);

"assigning a category to one or more key words from the labeled data" (Fig. 6a-6c and col. 11, lines 1-5, 'each element (key word)' in the sentences 1-19 is assigned a category and a matrix is formed);

"identifying mutually dependent relationships between or among the categorized words, according to at least one rule defining mutually dependent relationships between categorized words", (col. 11, lines 33-62, this matrix is then clustered into three clusters 'using a k-means clustering algorithm' based on the relationship between the words in the sentences, 'using nearest-neighbor (interpreted as mutual dependent relationship) rule', 'using the rules of thumb described above');

"grouping the identified mutually dependent relationships into groups of related mutually dependent relationships" (Fig. 6f and col. 11, lines 52-57, 'Clusters (the groups) I through III').

But, Vaithyanathan does not expressly disclose "extracting unique concepts associated with the identified groups of related dependent relationship, wherein the step of extracting

unique concepts comprises recognizing the identified groups of related mutually dependent relationships in which a statistical characteristic exceed a threshold of the set of related mutually dependent relationships". However, the feature is well known in the art as evidenced by Liddy who discloses multilingual document retrieval system and method using semantic vector matching (title), wherein 'the term "document"...include ...one or more clauses, sentences, or paragraphs' (col. 3, line 65 to col. 4, line 4), comprising 'matching ...conceptual-level contents...and frequency/co-occurrence (related dependent relationship) of proper nouns' (col. 6, lines 50-53); 'to select (extract) the single most appropriate concept group from the multilingual concept database for all those input words' 'using three sources of linguistic evidence', including 'a word in the sentence has been tagged (labeled and/or identified) ...with only one concept group code... considered Unique (unique concepts)' and 'and concept group codes ...more than a predetermined number (a statistical characteristic exceed a threshold) of words within the sentence being processed... considered Frequentcodes (related mutually dependent relationships)', 'these two types of locally determined concept group codes are used a "anchors" in the sentence' (col. 11 line 39 to col. 12, line 7); 'combined and normalized correlation (also interpreted as mutually dependent relationship) between each concept', 'highest correlation value bigger than predetermined threshold', 'N-gram based probability (also interpreted as a statistical characteristic) of occurrence of each concept' (Figs. 3A-3B); 'the sublanguage relies on items such as function words, meta-text phrases...to recognize and extract the formal logical combination of relevance requirements'(col. 17, lines 44-49) and 'single concept code (unique concepts) is assigned to the word'; which suggest the system has capability of implementing the functionality as claimed. Therefore, it would have been obvious to one of ordinary skill in the

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art at the time the invention was made to modify Vaithyanathan by providing recognizing/extracting word with a concept group considered unique and/or assigning word a single concept code (unique concepts) with higher correlation than a threshold or a probability, as taught by Liddy, for the purpose (motivation) of disambiguating the related words (Liddy: col. 12, lines 6-7) and/or finding highly relevant documents for searching (Liddy: col. 3, lines 25-28).

As per **claim 8** (depending on claim 7), Vaithyanathan in view of Liddy discloses “the categorized words identified as being in a mutually dependent relationship exist within separate clauses” (Vaithyanathan: Fig. 6f, col. 11, lines 52-56; Liddy: col. 6, lines ‘matching ...the conceptual- level contents’, ‘matching occurs based on the frequency and co-occurrence (also interpreted as mutually dependent relationship) of proper nouns in documents and queries’);

As per **claim 9** (depending on claim 8), Vaithyanathan in view of Liddy discloses “the separate clauses exist within separate sentences” (Vaithyanathan: Fig. 6a, col. 11, lines 52-57; Liddy: ‘the document ...to include one or more clauses, sentences, or paragraphs (including separate clause)’).

As per **claim 10** (depending on claim 7), Vaithyanathan in view of Liddy discloses “the converting step comprises conversion of the received collection of data into the same format and wherein the received collection of data comprises various data formats” (Vaithyanathan: Fig. 5 and col. 5, line 18-35, his document collection and ‘...words following a standardized set of format rules (corresponding to same format)’; Liddy: col. 8, lines 48, ‘accepts raw, unformatted text and transfers this to a standard format (interpreted as same format)’).

As per **claim 11** (depending on claim 7), Vaithyanathan in view of Liddy discloses “the key words comprise a coherent character string within the clauses” (Vaithyanathan: Figs 5 and 6A;).

As per **claim 12** (depending on claim 7), Vaithyanathan in view of Liddy further discloses “...searching a category dictionary to identify a category which matches the key word” (Liddy: col. 11, lines 13-14, ‘mapping (searching) each word to all possible corresponding concept categories using the multilingual concept database (MCD) (interpreted as category dictionary); col. 14, lines 3-67, ‘monolingual hierarchical concept dictionary (MHCD)’ and ‘MCD both define concepts as a groups of synonyms’).

As per **claim 13** (depending on claim 12), Vaithyanathan in view of Liddy further discloses “the category dictionary comprises combination of original expressions, parts of speech, concepts and categories, wherein the original expressions are equivalent to the key words, the parts of speech are a classification of the key words, the concept are replacement expressions of the key words and categories represent a larger group having the nature of the keyword” (Vaithyanathan: Figs. 6A and 6F and col. 5, lines 38-60; Liddy: col. 10, lines 53-67, ‘MCGRE (multilingual concept group retrieval engine), accept... part-of-speech tagged, input text (original expression) and retrieves from the multilingual concept database any and all of the concept groups...’; col. 9, lines 7-50, ‘Part of Speech (POS) tagger’, ‘identify various substantive words (key words)’, ‘concept-level categories’; col. 11, lines 18-33, ‘each concept group is a collection of words or phrases (key words)... that are conceptually synonymous or near-synonymous (replacement expressions of the key words)’; col. 14, lines 3-67, ‘monolingual hierarchical concept dictionary (MHCD)...define concepts as a groups of synonyms’; therefore,

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it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Vaithyanathan and Liddy these teachings to providing a database or dictionary having above mentioned elements, for the purpose of disambiguating the related words (Liddy: col. 12, lines 6-7) and/or finding highly relevant documents for searching (Liddy: col. 3, lines 25-28)).

As per **claim 14** (depending on claim 7), Vaithyanathan in view of Liddy further discloses “the mutually dependent relationships are determined according to rules applied to key words and their associated categories within a clause” (Vaithyanathan: Figs. 6f and 6g and col. 11, line 32 to col. 12, line 7, ‘nearest-neighbor rule’, ‘using the rules of thumb described above’).

As per **claim 15** (depending on claim 7), as best understood in view of rejection under 35 USC 112 1st (see above), the limitation is interpreted as “identifying the groups is achieved automatically through utilization of computer generated or user defined rules is defined for each category”. The rejection is based on the same reason described for claim 14, because the rejection for claim 14 covers the same or similar limitation(s) of claim 15.

As per **claim 16** (depending on claim 7), as best understood in view of rejection under 35 USC 112 1st (see above), Vaithyanathan in view of Liddy further discloses “the threshold is provided manually by a user for each of the identified groups of mutually dependent relationships in response to the user being presented a display of all the groups of mutually dependent relationships, at a GUI” (Liddy: Fig 2 and col. 8, lines 15-16 and col. 20, lines 16-40, ‘GUI 250’, ‘presenting the result to the user’, ‘allows users to interactive with the system ...’, which suggests that the system is capable of implementing the functionality as claimed).

As per **claim 17** (depending on claim 7), as best understood in view of rejection under 35 USC 112 1st (see above), the limitation is interpreted as “presenting identifying the groups to user at a GUI”. The rejection is based on the same reason described for claim 16, because the rejection for claim 16 covers the same or similar limitation(s) of claim 17.

As per **claim 18** (depending on claim 7), as best understood in view of rejection under 35 USC 112 1st (see above), the rejection is based on the same reason described for claim 16, because the rejection for claim 16 covers the same or similar limitation(s) of claim 18.

As per **claim 19** (depending on claim 7), the rejection is based on the same reason described for claim 7, because the rejection for claim 7 covers the same or similar limitation(s) of claim 19.

As per **claim 20** (depending on claim 7), the rejection is based on the same reason described for claim 16, because the rejection for claim 16 covers the same or similar limitation(s) of claim 20.

Claims **21-26** are the same in scope and content as claims 7-20 above and therefore are rejected under the same rationale.

As per **claims 29-30**, the rejection is based on the same reason described for claim 7, because the rejection for claim 7 covers the same or similar limitation(s) of claim 20, wherein the claimed “search/characteristic detection” is interpreted as “search or characteristic detection”.

Conclusion

10. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see <http://pair-direct.uspto.gov>.

QH/qh

July 6, 2006


RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER